STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

FINAL 1997 NET SYSTEM POWER CALCULATION

(1997 CALIFORNIA POWER MIX)

Proposed for adoption at the July 15, 1998 Business Meeting

Michael Magaletti
Ronald Wetherall

Electricity Analysis Office
Energy Information and Analysis Division
CALIFORNIA ENERGY COMMISSION

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Final 1997 Net System Power

For working purposes, Staff refers to the SB 1305 Power Content Label's "CA POWER MIX" as "Net System Power" which is the name given to that quantity in the legislation.

The Final 1997 Net System Power (with self-generation removed from the calculation):

1997 CA POWER MIX	
Fuel Type	Net System Power
Coal	21%
Large Hydroelectric	23%
Natural Gas	30%
Nuclear	15%
Other	<1%
Eligible Renewables	11%
Total:	**100%**

Preliminary 1997 Net System Power (As Adopted on 12/3/97)

The Preliminary 1997 Net System Power (which included self-generation estimates from the 1996 Table J-11):

1997 CA POWER MIX	
Fuel Type	Net System Power
Coal	17%
Large Hydroelectric	24%
Natural Gas	35%
Nuclear	14%
Other	<1%
Eligible Renewables	11%
Total:	**100%**

Fuel Types do not add to 100 percent because of rounding.

Sample SB 1305 Label Incorporating Final 1997 Net System Power Percentages

The sample below shows a power content label for a hypothetical product which a retail supplier claims to consist of 50% specific purchases (of eligible renewables in this case) and 50% non-specific net system power.

POWER CONTENT LABEL

ENERGY RESOURCES	PRODUCT NAME* (projected)	1997 CA POWER MIX** (for comparison)
Eligible Renewable	55%	11%
-Biomass & waste	-	2%
-Geothermal	-	5%
-Small hydroelectric	-	2%
-Solar	-	<1%
-Wind	-	1%
Coal	10%	21%
Large Hydroelectric	12%	23%
Natural Gas	15%	30%
Nuclear	8%	15%
Other	<1%	<1%
TOTAL	100%	100%

* 50% of Product Name is specifically purchased from individual suppliers.

**Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year.

For specific information about this electricity product, contact Company Name. For general information about the Power Content Label, contact the California Energy Commission at 1-800-555-7794 or www.energy.ca.gov/consumer.

1997 Final & Preliminary Net System Power (in detail)

1997 Final Net System Power

Final Net System Power Calculation for 1997				
Fuel Type	GigaWatt-hours		Net System Power	
Coal		51,201		20.9%
Large Hydroelectric		56,323		23.1%
Natural Gas		73,269		30.0%
Nuclear		36,741		15.1%
Other		173		0.1%
Eligible Renewables		26,267		10.8%
Biomass & Waste	5,373		2.2%	
Geothermal	11,950		4.9%	
Sm Hydro ($\leq$30 MW)	5,395		2.2%	
Solar	810		0.3%	
Wind	2,739		1.1%	
Total:		**243,972**		**100%**

Preliminary 1997 Net System Power

(adopted on 12/3/97)

Preliminary Net System Power Calculation for 1997				
Fuel Type	GigaWatt-hours		Net System Power	
Coal		43,729		16.8%
Large Hydroelectric		61,894		23.7%
Natural Gas		90,904		34.8%
Nuclear		36,617		14.0%
Other		282		0.1%
Eligible Renewables		27,676		10.6%
Biomass & Waste	6,073		2.3%	
Geothermal	12,619		4.8%	
Sm Hydro ($\leq$30 MW)	5,495		2.1%	
Solar	811		0.3%	
Wind	2,678		1.0%	
Total:		**261,101**		**100%**

What are the differences between the Final and Preliminary Net System Power Calculations?

The two major differences between the Preliminary 1997 and Final 1997 Net System Power (NSP) calculations are (1) the vintage of the data and (2) the removal of the self-generation. (See the table on the next page for the detailed numerical changes that these two differences make.)

Vintage of the data

The Preliminary 1997 NSP data are from Quarterly Fuel and Energy Report (QFER) forms covering 1996 and the first two quarters of 1997 The Final NSP data are from QFER forms covering 1997 with one major exception.

The Los Angeles Department of Water and Power (LADWP) has not filed QFER forms for 1997. Staff used Energy Information Agency Form 412 which covers only the 1996-1997 Fiscal Year (July 1, 1996 through June 30, 1997). This is in keeping with Staff's approach in developing the Preliminary NSP. Where data were missing or QFER forms not filed, Staff substituted available data from the same quarters in 1996.

Substituting 1997 vintage data for 1996 vintage data increases total NSP generation by approximately 1,800 gigawatt-hours.

Removal of the Self-Generation data

The Final 1997 NSP has no self-generation included in its calculation. Removing self-generation reduces total NSP generation by approximately 19,000 gigawatt-hours. The bulk of that reduction comes in the Natural Gas fuel category with the rest in Biomass and Waste.

The Preliminary 1997 NSP used 1996 data prepared by Energy Commission Staff for the ***California Statistical Abstract*** Table J-11, "California Electrical Energy Generation, 1987-1996." These data are derived from Energy Commission Staff forecasts of self-generation capacity in megawatts and an assumed capacity factor. They are estimates of the generation from self-generation units rather than actual reported generation from self-generation units.

Staff has re-evaluated the components of the Preliminary 1997 NSP in light of the many comments received on the Commission's draft regulations implementing SB 1305. It is clear to Staff that the majority of stakeholders think the main purpose of the NSP is to show consumers what they are "buying" if they do not make a specific purchase from a retail electricity service provider. Staff agrees with this view.

Since self-generation is neither sold to a retail consumer nor currently available for sale to retail consumers, Staff thinks it should not be part of the NSP calculation.

Numerical Changes from Preliminary Net System Power to Final Net System Power Due to Data Vintage & Removal of Self-Generation.

	Preliminary 1997 Net System Power (Adopted)		Final 1997 Net System Power with 1997 Data		Final 1997 Net System Power w/o Self-Gen	
Fuel Type	GWh	%	GWh	%	GWh	%
Coal	43,729	17%	51,201	19%	51,201	21%
Large Hydroelectric	61,894	24%	56,323	21%	56,323	23%
Natural Gas	90,904	35%	91,601	35%	73,269	30%
Nuclear	36,617	14%	36,741	15%	36,741	15%
Other	282	<1%	173	<1%	173	<1%
Eligible Renewables:	27,675	11%	26,906	10%	26,267	11%
Biomass & Waste	6,073	2%	6,012	2%	5,373	2%
Geothermal	12,619	5%	11,950	5%	11,950	5%
Small Hydro	5,495	2%	5,395	2%	5,395	2%
Solar	811	<1%	810	<1%	810	<1%
Wind	2,678	1%	2,739	1%	2,739	1%
Total:	261,101	100%	262,943	100%	243,972	100%
Difference due to Vintage:			1,843			
Difference due to Self-gen:					-18,971	
Overall Differences:						-17,128

What is Net System Power? The Statutory Definition...

Net System Power is "the mix of electricity fuel source types established by California Energy Resources Conservation and Development Commission representing the sources of electricity consumed in California that are not disclosed as specific purchases" by retail service providers.

What is Net System Power? The Practical Definition...

Net system power is the percentage of annual generation produced in California for consumption in California during the previous calendar year from each of the statute's fuel type categories with

<u>the Addition of</u>

Imports of Out-Of-State Generation by fuel type

<u>the Subtraction of</u>

Specific Purchases by fuel type (applies to 1998 NSP & beyond)
Self-Generation.

What are the Net System Power Fuel Types?

- Coal
- Large Hydroelectric (greater than 30 megawatts)
- Natural gas
- Nuclear
- Other (used for fuel types that are less than 2 % of net system power)
- Eligible Renewables
  - Biomass and Waste
  - Geothermal
  - Small Hydroelectric (less than or equal to 30 megawatts)
  - Solar
  - Wind

The Energy Commission may specify additional categories or change these categories, consistent with the requirements of SB 1305 and subject to public

hearing, if it determines that the changes will facilitate SB 1305's "disclosure objectives."

How is Net System Power calculated?

1. *Calculate gross system power.*

2. *Establish the generation mix for net out-of-state generation imports delivered at interface points and metered by the system operators.*

3. *Catalog and subtract from the gross system power mix all Specific Purchases identified by retail suppliers and self-generation.*

What data did the Staff use to calculate the Final Net System Power for 1997?

Quarterly Fuel and Energy Report Data for all of 1997 except for the Los Angeles Department of Water and Power (LADWP). For LADWP, Staff used Energy Information Agency Form 412 which covers only the 1996-1997 Fiscal Year (July 1, 1996 through June 30, 1997).

This EIA fiscal year data fits with Staff's earlier approach in calculating the Preliminary 1997 Net System Power when presented with missing QFER data or QFER forms not yet filed. Staff substituted data from the same quarters in 1996.

The ***1994 Electricity Report*** (***ER 94***) non-firm energy fuel mix assumptions for the generation mix of out-of-state imports.

<u>The Pacific Northwest</u>

80 percent hydroelectric
20 percent coal

<u>The Southwest</u>

74 percent coal
26 percent natural gas.

Dates & Data Sources for Net System Power Reports

January 1, 1998 (adopted on 12/3/97): Preliminary Net System Power calculation for Calendar Year 1997.

Source of Data: QFER 1996 and 1997
1996 Table J-11 (self-generation estimates)

Out-of-State Fuel Type Mix: ***ER 94***

October 15, 1998 (proposed to be adopted on July 15, 1998): Final Net System Power calculation for Calendar Year 1997.

Source of Data: QFER 1997 except for EIA Form 412 for LADWP

Out-of-State Fuel Type Mix: ***ER 94***

April 15, 1999 (and annually thereafter): Net System Power calculation for the previous calendar year.

Source of Data: System Operator data and whatever other sources of data (such as QFER) are available for the previous calendar year to "fill in the gaps."

Out-of-State Fuel Type Mix: A new methodology based on System Operator-provided data or Western States Coordinating Council generation data.